UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,884	12/28/2000	Kent K. Leung	CISCP192/3281	9421

22434 7590 07/06/2006

BEYER WEAVER & THOMAS, LLP
P.O. BOX 70250
OAKLAND, CA 94612-0250

EXAMINER	
MEHRPOUR, NAGHMEH	
ART UNIT	**PAPER NUMBER**
2617	

DATE MAILED: 07/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/752,884	LEUNG ET AL.	
	Examiner	Art Unit	
	Naghmeh Mehrpour	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *03 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

-

DETAILED ACTION

Claim Rejections - 35 USC э 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1-12, 14-16, 18-26,** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rai et al. (US Patent Number 6.393,482 Be) in view of Tsao et al. (US Patent Number 6,862,274 B1).

Regarding claim 1, Rai teaches in a Foreign Agent, a method of registering a mobile device with a Home Agent in an asymmetric link environment (see figure 16 and 29 col 40 lines 19-23) an asymmetric link is a communication path which is duplex, or a link payload rate of 6.144 Mbps +608, or multipoint system connected to one device), the method comprising:

associating each of one or more interfaces of the Foreign Agent with a different care-of address (col 41 lines 38-50);

sending an at least one agent advertisement including the care-of address for plurality interfaces of the Foreign Agent via one or more uplinks (col 20 lines 16-24, col 41 lines 38-50);

receiving a registration request forwarded via a downlink router (MSC 40 router, is a mobile router, see figure 2, and MSC router col 6 lines 16-33, col 20 lines 31-35); request identifying a care-of address associated with one (or more) interface of the Foreign Agent **such each of the plurality of interfaces is mapped to a different care-of address** (col 20 lines 36-40);

ascertaining the one of one or more the interfaces identified by the care-of address in the registration request (col 30 lines 41-44, col 41 lines 38-50), thereby identifying the interface to which the mobile device has roamed (col 20 lines 53-64);

forwarding the registration request to the Home Agent (col 20 lines 50-52);

receiving a registration reply from the Home Agent (col 20 lines 58-60); and

forwarding the registration reply to the mobile device via the ascertained interface (col 20 lines 60-64).

Rai fails to teach a method wherein the mobile device is a mobile a care-of address associated with one (or more) interface of the Foreign Agent **such each of the plurality of interfaces is mapped to a different care-of address.** However, Tsao teaches a method wherein the mobile device is a mobile a care-of address associated with one (or more) interface of the Foreign Agent **such each of the plurality of interfaces is mapped to a different care-of address** (col 3 lines 15-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the above teaching of Tsao with Rai, in order to provide mobility support for IPv4 and IPv6 inter-networking, and extend some layers in a protocol stack, which processes another network addressing protocol.

Regarding claims 2, 15, Rai teaches a method wherein the mobile device is a mobile including router 54 supporting Mobile IP (see figure 2 router 54 a mobile device which is part of the MSC 40, col 6 lines 10-21).

Regarding claims 3, 16, Rai teaches a method wherein the mobile device is a mobile node 32 supporting Mobile IP (see figure 2 col 5 lines 60-65 or see figure 16 mobile end user).

Regarding claims 4, 18, Rai teaches a method wherein the downlink router is a Foreign Agent (col 20 lines 31-35).

Regarding claims 5, 19, Rai teaches a method wherein the asymmetric link environment includes one or more satellites (col 5 lines 22-35).

Regarding claims 6, 20, Rai teaches a method wherein the registration request further includes an extension including a source MAC address of the mobile device (col 10 lines 40-52).

Regarding claim 7, Rai teaches a method wherein the registration reply includes a destination MAC address that is the source MAC address of the mobile device (col 10

lines 56-67, col 11 lines 1-7, see figures 4-5), Access Point and wireless Hub are co-located and functions as base station 64.

Regarding claims 8, 21, Rai teaches a method wherein the registration request includes a destination IP address field having a value of the care-of address from the agent advertisement (col 20 lines 34-52, col 41 lines 38-43).

Regarding claim 9, Rai teaches a method, further comprising:

entering the registration request in a pending registration request list (col 36 lines 4-12); and

updating the pending registration request list when the registration reply is received from the Home Agent (col 36 lines 24-28).

Regarding claim 10, Rai teaches a method further comprising: marking (start session) the registration request as having been received on the interface (IWF) advertising the care-of address (col 29 lines 41-47).

Regarding claim 11, Rai teaches a method wherein marking the registration request as having been received on the interface (IWF) advertising the care-of address (col 41 lines 38-50). comprises: updating a pending registration request list to indicate that the registration request has been received on the interface advertising the care-of address (col 18 lines 42-46, col 36 lines 9-23, col 43 lines 5-40).

Regarding claims 12, 25-26, Rai teaches a method wherein the registration reply includes a destination MAC address that is a broadcast address (col 40 lines 32-35).

Regarding claim 14, Rai teaches in a downlink router, a method of forwarding a Mobile IP registration request in an asymmetric link environment (see figure 16 and 29 col 40 lines 19-23) an asymmetric link is a communication path which is duplex, or a link payload rate of 6.144 Mbps +608, or multipoint system connected to one device)), the method comprising:

receiving a registration request composed and sent by a mobile device, the registration request identifying a care-of address (col 18 lines 42-46) (col 20 lines 50-52, col 41 lines 38-50);

forwarding the registration request to the Foreign Agent, thereby enabling the Foreign Agent to process the registration request and forward a registration reply to the mobile device via the interface (col 20 lines 53-64).

Rai fails to teach a method wherein the mobile device is a mobile a care-of address associated with one (or more) interface of the Foreign Agent **such each of the plurality of interfaces is mapped to a different care-of address.** However, Tsao teaches a method wherein the mobile device is a mobile a care-of address associated with one (or more) interface of the Foreign Agent **such each of the plurality of interfaces is mapped to a different care-of address** (col 3 lines 15-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to

use the above teaching of Tsao with Rai, in order to provide mobility support for IPv4 and IPv6 inter-networking, and extend some layers in a protocol stack, which processes another network addressing protocol.

Regarding claim 20, Rai teaches a method wherein the registration request further includes an extension including a source MAC address of the mobile device (col 40 lines 26-36, see table 4,

Regarding claims 22, 24, Rai teaches a Foreign Agent that supports Mobile IP, the Foreign Agent being capable of registering a mobile device with a Home Agent in an asymmetric link environment (see figure 16 and 29 col 40 lines 19-23) an asymmetric link is a communication path which is duplex, or a link payload rate of 6.144 Mbps +608, or multipoint system connected to one device), the Foreign Agent comprising:

a processor (see figure 4 col 11 lines 15-19); and

a memory, at least one of the processor and the memory being adapted for:

associating each of one of plurality interfaces of the Foreign Agent with a different

care-of address (see figure 4, col 20 lines 1-4).Wireless HUB and access point 82 are co-located and formed the base station. The HDD stores information about the end□s system home network, there the foreign agent must comprises a memory for storing the information

sending at least an agent advertisement including the care-of address for the one or more

interfaces of the Foreign Agent via one or more uplinks (col 20 lines 16-24);

receiving a registration request forwarded via a downlink router, the registration request identifying a care-of address associated with one of the one or more interfaces of

the Foreign Agent (col 20 lines 16-35);

ascertaining one of the plurality interfaces identified by the care-of address, thereby identifying the interface to which the mobile device has roamed (col 20 lines 53-64);

forwarding the registration request to the Home Agent (col 20 lines 50-52);

receiving a registration reply from the Home Agent (col 20 lines 58-60); and

forwarding the registration reply to the mobile device via the ascertained interface (col 9 lines 60-64). Rai fails to teach a method wherein the mobile device is a mobile a care-of address associated with one (or more) interface of the Foreign Agent **such each of the plurality of interfaces is mapped to a different care-of address.** However, Tsao teaches a method wherein the mobile device is a mobile a care-of address associated with one (or more) interface of the Foreign Agent **such each of the plurality of interfaces is mapped to a different care-of address** (col 3 lines 15-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the above teaching of Tsao with Rai, in order to provide mobility

support for IPv4 and IPv6 inter-networking, and extend some layers in a protocol stack, which processes another network addressing protocol.

Regarding claim 23, Rai teaches a computer-readable medium, the computer-readable medium being adapted for enabling a Foreign Agent that supports Mobile IP to register a mobile device with a Home Agent in an asymmetric link environment (see figure 16 and 29 col 40 lines 19-23) an asymmetric link is a communication path which is duplex, or a link payload rate of 6.144 Mbps +608, or multipoint system connected to one device col 7 lines 6-24), comprising:

instructions for associating each of one of a plurality interfaces of the Foreign Agent with a different care-of address (col 41 lines 38-50);

instructions for sending an agent advertisement including the care-of address for the one or more interfaces of the Foreign Agent via one or more uplinks (col 20 links 35-40);

instructions for receiving a registration request forwarded via a downlink router, the registration request identifying a care-of address for each of the plurality associated with one of the plurality one or more interfaces of the Foreign Agent (col 20 lines 50-52);

instructions for ascertaining one of the interfaces identified by the care-of address in the registration request , thereby identifying the interface to which the mobile device has roamed (col 20 lines 53-64);

instructions for forwarding the registration request to the Home Agent;

instructions for receiving a registration reply from the Home Agent (col 20 lines 58-60); and

instructions for forwarding the registration reply to the mobile device via the ascertained interface (col 20 lines 60-64).

3. **Claim 13**, is rejected under 35 U.S.C. 103(a) as being unpatentable over Rai et al. (US Patent Number 6.393,482 Be) in view of Tsao et al. (US Patent Number 6,862,274 B1) in further view of Lee et al. (US Patent Number 2002/0075878 A).

Regarding claim 13, Rai teaches a method wherein the registration reply includes a destination MAC address that is a unicast address (see table 4, first row col 25 lines 65-67, col 40 lines 27-44). Rai does not specifically mention that a destination MAC address is a multicast address. However Lee teaches a destination MAC address is a multicast address (page 4 section 0043). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the above teaching of Lee with Rai, in order to support any host any clients requesting registration by creating a multicast routing table.

4. **claim 17,** is rejected under 35 U.S.C. 103(a) as being unpatentable over Rai et al. (US Patent Number 6.393,482 Be) in view of Tsao et al. (US Patent Number 6,862,274 B1) in further view of Albert et al. (US Patent Number 6,606,316).

Regarding claim 17, Rai fails to teach a method wherein the registration request includes a time to live field having a value that is greater than one. However Albert teaches a method wherein the registration request includes a time to live field having a value that is greater than one (col 16 lines 35-63). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the above teaching of Albert with Rai, in order for the service manager to control forwarding agent, and includes the destination IP address in the routing protocol updates.

Response to Arguments

Applicant's arguments with respect to claim1-26 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. **Any responses to this action should be mailed to:**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Naghmeh Mehrpour whose telephone number is 571-272-7913. The examiner can normally be reached on 8:00- 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold be reached (571) 272-7905.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NM

June 29, 2006